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Economic and Demographic Impacts of Uintah Basin Energy Development†

by Rodger Weaver and Brad T. Barber*

Introduction

Utah's Uintah Basin Multi-County District contains rich oil shale and tar sands deposits that could serve as the basis for a significant synthetic fuels industry. While actual production of oil has been limited thus far, several projects are in the pre-commercial stage, with sizable production goals targeted for the middle to the end of this decade. The potential impacts of the synthetic fuels industry could double the population and provide economic opportunities for the Uintah Basin, an area whose prospects without energy development are for limited growth and eventual stagnation. Because of the magnitude of possible impacts from the synfuels industry, state, local, federal and private sector planners have devoted considerable effort to preparing for them.

In November 1980, the State Planning Coordinator's Office published a report entitled Energy 2000: The Impacts of Energy Development in Eastern Utah. Because of major changes in some of the projects discussed in that report, it has become necessary to update the projections contained therein to incorporate the most current information available. The projections presented here update the Energy 2000 projections and supercede all previous projections produced for the Uintah Basin area.

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†This article is a condensation of Energy Development in the Uintah Basin: Economic and Demographic Impacts, jointly produced by the Bureau of Economic and Business Research and the Office of the State Planning Coordinator, July 1981.

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Geographic Focus

Figure 1 shows the location of Utah's Uintah Basin area and presents the geographic breakdown used in the economic and demographic impact analysis. The smallest unit of analysis is the Census County Division (CCD's are established for data reporting purposes by the U.S. Census Bureau).[1] The Rangely CCD of Rio Blanco County, Colorado, has been incorporated into the projections presented here, because it is assumed that part of the synfuel work force in the Uintah Basin will choose to reside in or near Rangely.

[1]Note: The uninhabited North and South Duchesne CCD's are incorporated into the Duchesne and Roosevelt CCD's respectively. The Bonanza CCD is not separated in the 1980 Census, but has been broken out along the 1970 Census boundaries because of its importance in this analysis.

Development Scenarios

Both of the development scenarios analyzed in this project were developed by the Utah State Energy Office. These scenarios involve explicit assumptions regarding production plans for a number of oil shale and tar sands projects. Table 1 lists the projects that are included in the Medium and High

Figure 1

GEOGRAPHIC DETAIL OF ECONOMIC AND DEMOGRAPHIC IMPACT ANALYSIS

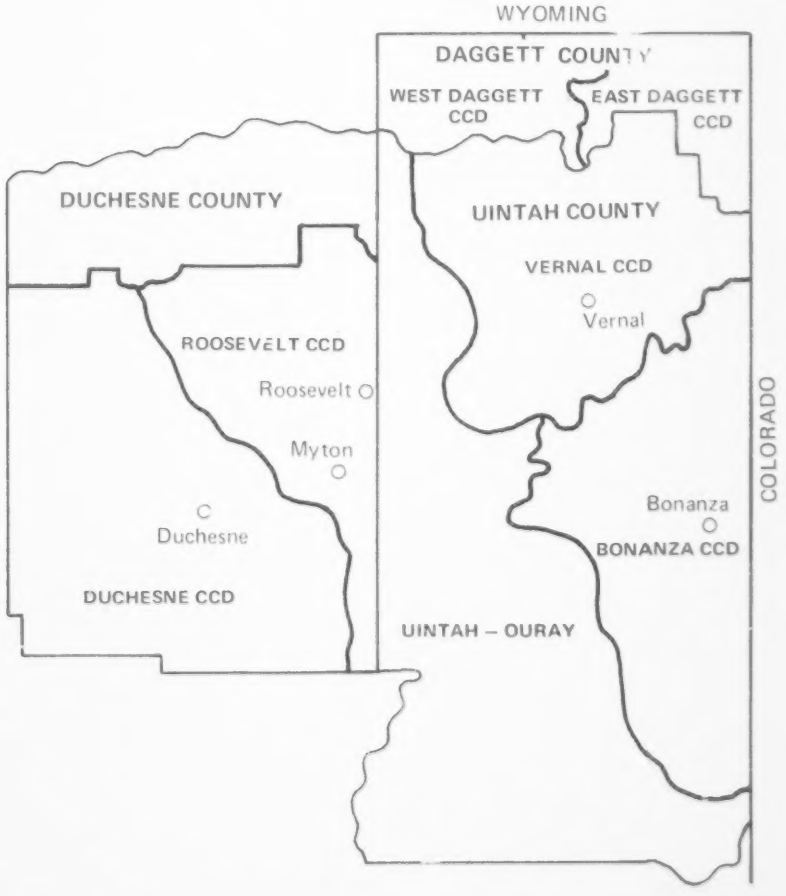

Table 1

COMPONENT PROJECTS
MEDIUM AND HIGH DEVELOPMENT SCENARIOS

Project	Scenarios: Medium Development 143,000 b/d-Oil Shale 800MW Elec. Generation	Scenarios: High Development 193,000 b/d-Oil Shale 20,000 b/d-Tar Sands 213,000 b/d-Total 800 MW Elec. Generation
White River Shale		
oil shale - Bonanza area	50,000 b/d	100,000 b/d
Geokinetics		
oil shale - Bonanza area	20,000 b/d	
Tosco-Sand Wash		
oil shale - Bonanza area	43,000 b/d	
Paraho Shale		
oil shale - Bonanza area	30,000 b/d	
Moon Lake Power		
coal fired electrical	800 MW	
White River Dam		
inter-basin transfer - Duchesne, Roosevelt, and Vernal areas		
Sohio Tar Sands		
tar sands - Vernal area		20,000 b/d

Development Scenarios. Five projects and production levels are common to both scenarios. The High Development Scenario doubles White River Shale Project production and adds the Sohio Tar Sands Project. The Medium Development Scenario represents an oil shale industry of 143,000 b/d, and the High Development Scenario an industry of 193,000 b/d from shale plus 20,000 b/d from tar sands. Table 2 shows direct employment assumptions of both scenarios.

Several projects have been proposed since these scenarios were developed, including the Magic Circle Project and the Syntana Utah Project. If all presently recognized oil shale and tar sands projects were realized, total production would exceed 213,000 b/d. However, the likelihood of all of these projects being developed is extremely low.

Also included on Table 1 are three major projects that are not part of the synthetic fuels industry: the Moon Lake Power Plant Project (Bonanza Power Plant), the White River Dam, and the Central Utah Project. It is worth noting that in the western part of the Basin, the potential impacts of completion of the Central Utah Project pose problems similar to those associated with the construction phase of synfuel developments, but without a major augmentation of Duchesne County's permanent economic base. This prospect serves to exacerbate the energy development related problems and lends

Table 2

DIRECT EMPLOYMENT ASSUMPTIONS[a]
UINTAH BASIN MCD PLUS RANGELY CCD
MEDIUM AND HIGH DEVELOPMENT SCENARIOS

Project	Barrels of Oil/Day	1981	1982	1983	1984	1985	1986	1987	1998	1989	1990	1991	1992	1993	1994	1995
MEDIUM DEVELOPMENT SCENARIO																
White River Shale																
Construction		132	576	1,830	1,032	346	1,032	2,390	4,037	3,797	1,518	280	0	0	0	0
Operation	50,000	0	0	10	68	369	838	885	991	1,286	1,867	2,215	2,215	2,215	2,215	2,215
Geokinetics																
Operation	20,000	28	37	50	100	150	200	250	300	350	400	450	500	500	500	500
Tosco - Sand Wash																
Construction		0	30	400	1,100	1,900	2,650	3,150	3,250	2,000	1,000	500	0	0	0	0
Operation	43,000	0	0	0	0	0	450	825	1,125	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Paraho Shale																
Construction		0	800	1,300	1,300	1,000	300	0	0	0	0	0	0	0	0	0
Operation	30,000	0	0	0	500	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
White River Dam																
Construction		0	94	94	36	36	0	0	0	0	0	0	0	0	0	0
Operation	na	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5
Moon Lake Power																
Construction		119	275	760	1,021	710	252	0	0	6	0	0	0	0	0	6
Operation	na	2	4	41	108	172	200	200	200	200	200	200	200	200	200	200
Central Utah Project[b]																
Construction		485	850	970	1,165	850	255	20	5	85	95	280	290	215	225	45
Operation	na	0	0	0	0	0	27	27	27	27	27	27	27	27	27	27
TOTAL MEDIUM DEVELOPMENT SCENARIO																
Construction		736	2,625	5,354	5,654	4,842	4,489	5,560	7,292	5,882	2,613	1,060	290	215	225	45
Operation		30	41	101	776	1,696	3,220	3,692	4,148	4,568	5,199	5,597	5,647	5,647	5,647	5,647
Construction plus Operation	143,000	766	2,666	5,455	6,430	6,538	7,709	9,252	11,440	10,450	7,812	6,657	5,937	5,862	5,872	5,692
CHANGES FOR HIGH DEVELOPMENT SCENARIO																
White River Shale																
Construction		132	576	1,830	1,032	346	1,032	2,390	4,037	3,797	2,938	2,879	1,518	280	0	0
Operation	100,000	0	0	10	68	369	838	885	991	1,286	1,867	2,215	2,492	3,040	3,353	3,353
Sohio Tar Sands																
Construction		0	0	0	0	0	0	485	715	1,218	447	0	0	0	0	0
Operation	20,000	0	0	0	0	0	0	0	243	513	563	563	563	563	563	563
TOTAL OF HIGH DEVELOPMENT SCENARIO																
Construction		736	2,625	5,354	5,654	4,842	4,489	6,045	8,007	7,100	4,480	3,659	1,808	495	225	45
Operation	213,000	30	41	101	776	1,696	3,220	3,692	4,391	5,081	5,762	6,160	6,487	7,035	7,348	7,348
Construction plus Operation		766	2,666	5,455	6,430	6,538	7,709	9,737	12,398	12,181	10,242	9,819	8,295	7,530	7,573	7,393

[a] All numbers represent annual average or mid-year estimates.
[b] The operation work force estimates for the Central Utah Project are currently being revised.

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further importance to preparing to deal with the influx of new residents and, especially in western Duchesne County, with the boom-bust cycle of construction.

Methodology

In order to project the economic/demographic impacts of the scenarios outlined in Table 1, first cut employment profiles were acquired for each project from previous studies and reports. These employment profiles were then circulated among the sponsoring companies or government agencies with the request that any changes be indicated. The energy companies, the U.S. Bureau of Reclamation, and the Utah Division of Water Resources were all highly cooperative in providing the most up-to-date information available. A similar procedure established other crucial assumptions, including the areas of residence for each project's work force, the proportion of construction work forces housed in construction worker bachelor camps, etc. The resulting Development Scenario employment figures were then fed into an economic and demographic impact simulation model, called UPED, to produce Uintah Basin-wide projections of the impacts of the scenarios. A second model called SAM, was then used to allocate these impacts to the CCD level. These models, which are the official projection methodologies of the State of Utah, were also used to produce the Baseline projections that follow.

Baseline Projections

The Baseline Projection assumes neither major energy development in addition to currently ongoing conventional oil and gas exploration and development nor any major non-energy related projects. Without the occurrence of new energy development, employment in the Uintah Basin is projected to grow by 12.6 percent between 1980-2000. Most of this growth occurs in the primarily residentiary sectors of the economy including trade, services and government. Mining and manufacturing are projected to remain stable and agriculture to decline over the projection period under the baseline condition. During the same period, population is expected to grow by 11.5 percent and households by 13.1 percent. The Baseline Projection for the Uintah Basin MCD plus Rangely is summarized in Table 3.

As a result of the recent deregulation of natural gas prices, there has been, over the last 12 - 18 months, a period of rapid growth in the natural gas drilling and drilling support industries. The long run implications of this expansion has not been included in the Baseline Projection presented in this article. A project is presently underway to revise the Baseline to incorporate long term growth in this industry and in a number of other sectors in all three Uintah Basin counties.

The Uintah Basin CCD-Level Baseline Allocations

In allocating the MCD-level Baseline Projection among the eight constituent CCD's, a number of crucial assumptions have been made. The most important of these is that the proportional distribution among these CCD's of each sector's basic employment would retain the recent historical pattern. Also assumed was continuation of current inter-CCD trade patterns. Vernal CCD is assumed to continue serving as the highest order market center for most industrial sectors, with the other CCD's purchasing substantial amounts of goods and services from Vernal. The Roosevelt CCD also serves as a high order center, especially as a source of commodities for the Duchesne and Uintah-Ouray CCD's, but Roosevelt still continues to procure substantial quantities of goods and services from Vernal. Table 4 summarizes

Table 3

UINTAH BASIN MCD PLUS RANGELY CCD
SUMMARY OF BASELINE PROJECTIONS BY YEAR

Year	Population	Employment	Households	Labor Force	School-Age Population (5-17)
1980	36,455	14,108	10,928	14,022	8,105
1985	40,304	15,372	11,915	15,275	9,684
1990	42,838	15,985	12,423	15,889	11,719
1995	42,538	16,002	12,418	15,904	11,973
2000	40,987	15,895	12,335	15,794	10,519

Table 4

UINTAH BASIN PLUS RANGELY CCD BASELINE PROJECTION
SUMMARY OF ALLOCATION TO CCD LEVELS

Year	Popula-tion	Employ-ment	Popula-tion	Employ-ment	Popula-tion	Employ-ment	Popula-tion	Employ-ment
	Roosevelt		Duchesne		West Daggett		East Daggett	
1980	9,726	3,398	2,839	1,272	548	235	221	132
1985	11,242	3,799	3,202	1,369	578	253	221	131
1990	12,195	3,999	3,481	1,427	598	265	221	130
1995	12,202	4,017	3,493	1,441	587	271	221	129
2000	11,601	3,973	3,325	1,444	582	282	221	129
	Vernal		Uintah-Ouray		'Bonanza'		Rangely	
1980	16,168	6,567	4,095	1,224	243	289	2,615	977
1985	17,736	7,220	4,214	1,250	249	283	2,865	1,054
1990	18,702	7,509	4,289	1,258	256	278	3,105	1,104
1995	18,452	7,487	4,227	1,247	263	277	3,105	1,118
2000	17,509	7,379	4,328	1,249	277	278	3,161	1,147

CCD-level allocations of the Baseline Projection.

Medium Energy Development Scenario Projections

The most significant aspect of the Medium Development Scenario is, clearly, the tremendous increase in permanent Uintah Basin population with the advent of a significant synthetic fuels industry. As shown in Table 5, the year 2000 total Medium Scenario population (Baseline plus impact: 73,464) is almost 80 percent larger than the Baseline population alone. This represents an annual average growth

Table 5

UINTAH BASIN PLUS PARGELY
MEDIUM DEVELOPMENT SCENARIO
SUMMARY OF IMPACTS
(Additional to Baseline)

Year	Population Impact	Employment Impacts		Households Impacts	Labor Force Impacts	School Age Population (5-17) Impacts
		Total	Basic[a]			
1981	2,033	1,063	766	718	1,026	381
1982	6,275	3,540	2,666	2,089	3,409	1,051
1983	12,603	7,215	5,455	4,157	6,956	2,045
1984	15,215	8,652	6,420	5,079	8,350	2,529
1985	16,578	9,091	6,538	5,341	8,816	2,916
1986	20,480	10,957	7,709	6,361	10,704	3,678
1987	25,046	13,220	9,252	7,648	12,924	4,414
1988	31,941	16,564	11,440	9,979	16,142	5,668
1989	30,218	15,342	10,450	9,246	15,001	5,371
1990	25,588	12,357	7,812	7,730	12,155	4,691
1991	24,484	11,265	6,657	7,317	11,112	4,665
1992	24,607	10,773	5,937	7,265	10,659	4,960
1993	26,025	11,091	5,862	7,559	11,008	5,616
1994	27,510	11,502	5,872	7,896	11,420	6,332
1995	28,183	11,582	5,692	7,977	11,504	6,861
1996	29,202	11,848	5,647	8,194	11,775	7,318
1997	30,248	12,156	5,647	8,439	12,084	7,805
1998	31,140	12,428	5,647	8,654	12,358	8,324
1999	31,901	12,668	5,647	8,849	12,599	8,878
2000	32,477	12,865	5,647	9,012	12,781	9,469

[a]The part of basic employment and hence of all impacts derived from the Uintah Unit of the CUP is actually expected to occur five to six years earlier than indicated.

rate of 3.4 percent from 1980 to 2000 compared to the Baseline projection's yearly growth rate averaging only a little over 1/2 of 1 percent. A second major characteristic of the population impact is that a boom-bust path is predicted as the various projects complete their construction phases in the late 1980's - early 1990's, and move into their lower direct employment operations phases. The peak population impact year during the construction phase, 1988, introduces almost 32,000 people in the area in addition to the Baseline. This figure can be expected to be higher, approximately 35,500 persons, if the White River, Tosco, and Paraho plans for bachelor camps to house approximately one-third of their construction workers are not realized.

One major assumption has been made in carrying out the MCD-level analysis of both the Medium and High Development Scenarios: the area will undergo a significant change in its industrial structure due to substantial increases in Uintah Basin population. In particular, it is assumed that in most industrial sectors, a process of import substitution will occur such that a significant proportion of the goods and services presently being imported into the Uintah Basin from locations such as the Wasatch Front will begin to be provided by jobs located in the Basin itself. The result of this assumption is the unusually high employment multiplier expected in the projections (increase in total jobs as compared to those in the Baseline Projection divided by the increase in basic jobs). The 2.27 employment multiplier used in these projections will occur only if the assumed import substitution transformation actually takes place. Additional increases in basic employment, such as those associated with further synfuel developments, would not be exhibited to have such a high multiplier since the Medium and High Scenarios already assume this import substitution effect.

School Age Population Impacts

As shown in Table 5, the Medium Scenario would place almost 9,500 children into the Uintah Basin area's schools, in addition to the more than 8,900 Baseline Projection of school age population. The Medium Scenario more than doubles the school age population, although the total population is only 1.8 times the Baseline figure. This illustrates an important difference between the two projections, namely, that the in-migration occurring in the Medium Scenario yields a population proportionately younger than the Baseline population and with proportionately different demands for human services such as education, health care and income maintenance programs.

The CCD-Level Impacts of the Medium Development Scenario in the Uintah Basin

The allocation of MCD-level impacts among the constituent CCD's depends crucially upon three sets of assumptions: (1) the locations of the project's direct basic employment, (2) commuting patterns of the work force holding those jobs, and (3) the shopping-trade patterns which serve to locate the residentiary jobs in the various communities. No modification of the central place hierarchy among CCD's in the Uintah Basin is expected; in other words, Vernal and Roosevelt will continue to serve in leading service provision capacities. Table 6 presents the allocations of population and employment among the CCD's.

A number of important inferences can be drawn from the summaries appearing in Table 6. Probably the most significant is that the bulk of the impact (89 percent in the permanent operations phase) will be centered in Vernal. While the Bonanza CCD will be the location of all energy jobs in the Medium Development Scenario (and most energy jobs in the High Scenario), the plans and expectations of local officials and the energy

Table 6

UINTAH BASIN PLUS RANGELY CCD
SUMMARY OF ALLOCATION OF
MEDIUM DEVELOPMENT SCENARIO IMPACTS

Year	Roosevelt		Duchesne		West Daggett		East Daggett	
	Population	Employment	Population	Employment	Population	Employment	Population	Employment
1981	671	103	416	503	1	1	0	0
1982	1,453	227	694	835	3	2	0	0
1983	2,555	401	895	1,071	6	3	0	0
1984	3,109	500	1,093	1,261	8	4	0	0
1985	3,254	542	915	959	8	4	0	0
1986	3,356	603	310	281	10	6	0	0
1987	3,979	715	108	67	12	6	0	0
1988	5,019	900	106	53	16	8	1	0
1989	4,633	870	109	53	15	8	1	0
1990	4,053	804	108	50	15	7	1	0
1991	4,679	1,187	122	55	16	8	1	1
1992	4,803	1,263	135	59	17	7	1	1
1993	4,890	1,242	150	64	19	8	1	1
1994	5,199	1,335	165	69	21	9	2	1
1995	4,882	1,146	175	72	23	10	2	1
1996	4,962	1,147	187	76	25	10	2	1
1997	5,161	1,208	200	81	27	11	2	1
1998	5,331	1,262	212	85	28	11	2	1
1999	5,478	1,310	223	88	30	12	2	1
2000	5,593	1,349	231	92	31	12	2	1

Year	Vernal		Uintah-Ouray		'Bonanza'		Rangely	
	Population	Employment	Population	Employment	Population	Employment	Population	Employment
1981	749	192	153	8	0	250	39	6
1982	3,147	635	298	17	452	1,795	226	30
1983	7,016	1,164	453	28	1,104	4,473	576	75
1984	8,670	1,457	521	33	1,104	5,301	712	96
1985	9,991	1,737	457	30	1,103	5,697	854	121
1986	13,624	2,390	800	259	1,304	7,263	1,075	155
1987	17,068	2,986	832	262	1,804	9,003	1,246	180
1988	22,414	3,890	955	274	1,804	11,207	1,628	234
1989	21,288	3,797	939	274	1,703	10,112	1,529	228
1990	18,414	3,436	876	270	803	7,582	1,315	207
1991	17,269	3,379	865	272	362	6,161	1,228	204
1992	17,532	3,538	879	276	2	5,416	1,233	213
1993	18,733	3,850	914	281	3	5,416	1,310	232
1994	19,802	4,139	943	285	3	5,416	1,378	249
1995	20,694	4,386	966	288	3	5,416	1,434	264
1996	21,546	4,629	987	292	3	5,416	1,488	279
1997	22,316	4,854	1,005	296	4	5,416	1,535	292
1998	22,968	5,054	1,019	299	4	5,417	1,575	304
1999	23,523	5,229	1,031	301	4	5,417	1,609	314
2000	23,945	5,372	1,039	303	4	5,417	1,635	323

companies are that the workers will live in existing communities. Only if a new town is built in Bonanza will that CCD participate in the general economic boom.

The high impacts on Vernal reflect the expectation that most of the energy projects' work force will live in that area and that Vernal will continue as the highest order trade center in the Uintah Basin. The permanent impacts on the Roosevelt, Uintah-Ouray, and Rangely CCD's are also very significant, representing increases of 48, 24, and 52 percent, respectively, above these areas' Baseline Projections in the year 2000. The Vernal impact is, however, much the largest in both absolute and relative terms, representing an increase of 136 percent over the Baseline.

Another important implication from Table 6 is the geographic distribution of the boom-bust construction cycle impacts. The unfortunate necessity of assuming that CUP-Uintah Unit construction in Roosevelt CCD occurs in the 1991-95 period rather than the planned 1985-90 period makes the boom-bust problems to be faced in that area appear more benign in Table 6 than they may actually be if all current plans are carried out. In particular, CUP-Uintah Unit construction is actually planned to peak at about the same time as is Bonanza energy project construction commuting from Roosevelt. Given this, the figures for the Roosevelt population impact in the late 1980's will be on an order of 15-20 percent higher in those years, while the decline in the post-construction phase (early 1990's) will be about 30 percent deeper.

Figure 2 illustrates project-specific commuting projections for the Medium Development Scenario. The construction cycle data in Figure 2 represent the peak construction year for the receiving CCD. These figures vary somewhat year by year as different projects with different project specific commuting assumptions pass through their construction phases. The operation phase commuting data in Figure 2 are for the fully staffed phase, and also vary year by year during the phasing-in of the various projects.

High Development Scenario Projections

The MCD-level projections of the impacts of the High Development Scenario are summarized in Table 7. The major differences between these figures and the figures for the Medium Development Scenario are the larger total permanent impacts, and the fact that the longer construction interval reduces the magnitude of the post construction peak bust. The total permanent population impact is 24 percent higher than the Medium Development Scenario impact and represents an increase above projected year 2000 Baseline population of 98 percent. Differences between the two development scenarios in other projection categories--employment, households, labor force, school-age population--are all roughly comparable with those for population impacts. The number of housing units required in the year 2000 in the High Development Scenario is almost double the corresponding figure for the Baseline Projection and is more than double the area's total housing stock. Again the problem of housing stock increases required is exacerbated by the boom-bust phenomenon, since almost the entire year 2000 households impact will have been imposed during the peak of the construction phase in the year 1989.

The CCD-Level Impacts of the High Development Scenario in the Uintah Basin

With respect to the location of direct basic employment, the additional White River Shale Employment will, of course, be located in the Bonanza CCD, while Sohio Tar Sands jobs will be located in the Vernal CCD. The Bonanza CCD peak employment is the same in the two

FIGURE 2. UINTAH BASIN PLUS RANGELY
MEDIUM DEVELOPMENT SCENARIO
Commuting to Hold Direct Basic Jobs

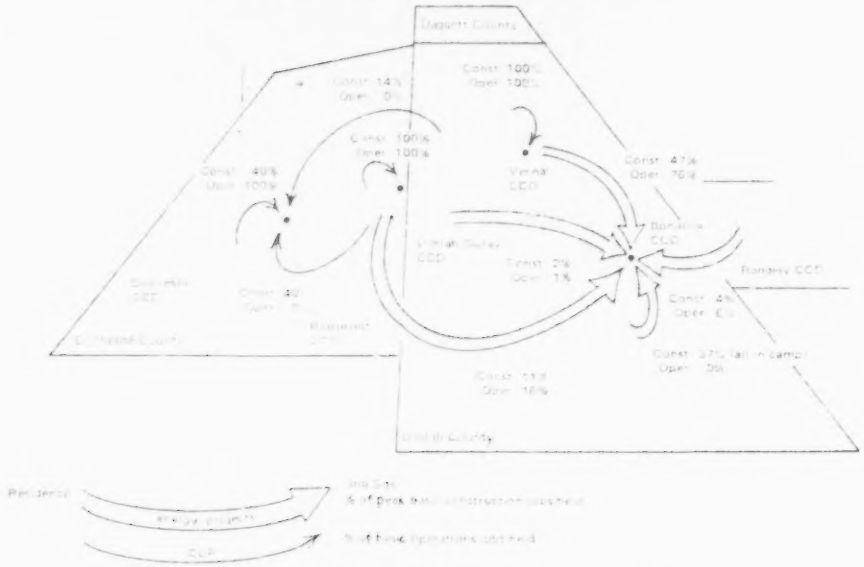
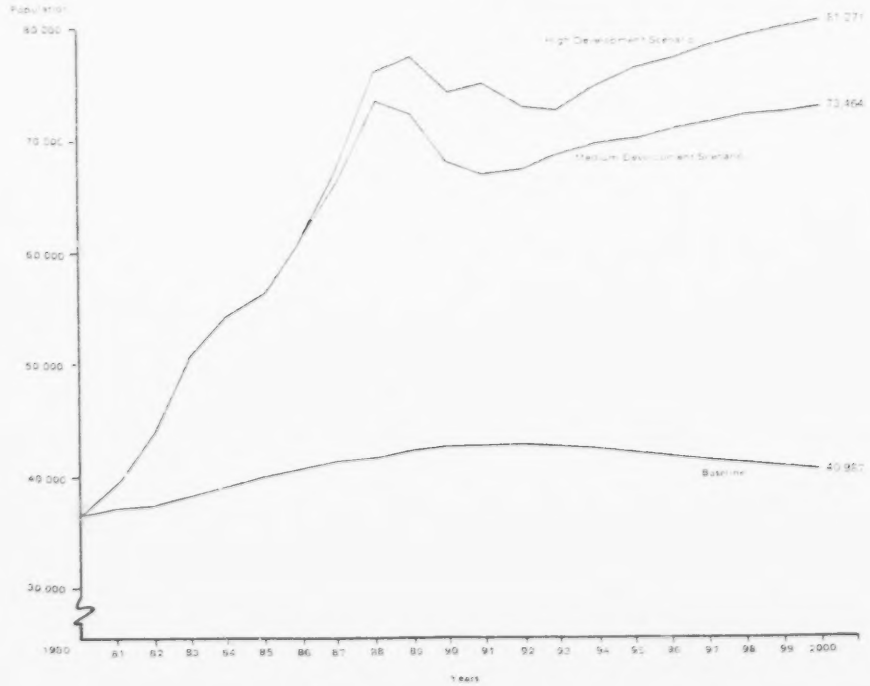


FIGURE 3. UINTAH BASIN PLUS RANGELY
MCD-LEVEL POPULATION PROJECTIONS
Baseline – Medium Development Scenario – High Development Scenario



scenarios, as is the year of its occurrence. The construction cycle implication of the High Development Scenario is for a more drawn-out construction period, but not for a higher peak.

The commuting proportions assumed for the additional White River Shale employees are the same under the High Scenario as the Medium Scenario. All Sohio Tar Sands project employees in both the construction and operations phases are assumed to reside in the Vernal CCD. Table 8 shows the allocation of High Development Scenario impacts among CCD's.

Table 7

UINTAH BASIN PLUS RANGELY
HIGH DEVELOPMENT SCENARIO
SUMMARY OF IMPACTS
(Additional to Baseline)

Year	Population Impact	Employment Impacts		Households Impacts	Labor Force Impacts	School Age Population (5-17) Impacts
		Total	Basic[a]			
1981	2,033	1,063	733	718	1,026	381
1982	6,275	3,540	2,666	2,089	3,409	1,051
1983	12,603	7,215	5,455	4,157	6,956	2,045
1984	15,215	8,652	6,430	5,079	8,350	2,529
1985	16,578	9,091	6,538	5,341	8,516	2,916
1986	20,480	10,957	7,709	6,361	10,704	3,678
1987	26,214	13,874	9,737	8,059	13,552	4,607
1988	34,341	17,890	12,398	10,822	17,435	6,081
1989	35,178	17,949	12,181	10,954	17,536	6,275
1990	31,953	15,742	10,242	9,781	15,444	5,834
1991	32,613	15,615	9,819	9,841	15,340	6,137
1992	30,844	14,084	8,295	9,189	13,894	6,111
1993	30,677	13,554	7,530	9,011	13,406	6,477
1994	32,794	14,150	7,573	9,532	14,013	7,335
1995	34,303	14,396	7,393	9,824	14,296	8,082
1996	35,844	14,773	7,347	10,165	14,687	8,742
1997	37,196	15,151	7,347	10,479	15,056	9,402
1998	38,362	15,489	7,347	10,756	15,395	10,062
1999	39,386	15,797	7,347	11,010	15,704	10,722
2000	40,284	16,075	7,347	11,250	15,984	11,383

[a]The part of basic employment and hence of all impacts, derived from the Uintah Unit of the CUP is actually expected to occur five to six years earlier than indicated.

Table 8

UINTAH BASIN PLUS RANGELY CCD
SUMMARY OF ALLOCATION OF
HIGH DEVELOPMENT SCENARIO IMPACTS

Year	Population	Employment	Population	Employment	Population	Employment	Population	Employment
	Roosevelt		Duchesne		West Daggett		East Daggett	
1981	671	103	416	503	1	1	0	0
1982	1,453	227	694	835	3	2	0	0
1983	2,535	401	895	1,071	6	3	0	0
1984	3,109	506	1,093	1,261	8	4	0	0
1985	3,254	542	915	959	8	4	0	0
1986	3,356	603	310	281	10	6	0	0
1987	3,932	711	107	67	13	6	0	0
1988	4,921	889	106	52	16	8	1	0
1989	4,571	868	109	53	17	8	1	0
1990	4,401	864	113	53	17	8	1	0
1991	5,444	1,324	131	60	19	9	1	1
1992	5,314	1,346	140	62	20	9	1	1
1993	5,236	1,298	149	66	22	9	2	1
1994	5,667	1,419	167	72	24	10	2	1
1995	5,474	1,255	181	76	26	11	2	1
1996	5,625	1,271	197	81	29	12	2	1
1997	5,862	1,339	212	86	31	13	2	1
1998	6,066	1,401	225	91	33	13	2	1
1999	6,248	1,458	238	95	35	14	3	1
2000	6,407	1,509	249	99	36	14	3	1
	Vernal		Uintah-Ouray		'Bonanza'		Rangely	
1981	749	192	153	8	0	250	39	6
1982	3,147	635	298	17	452	1,795	226	30
1983	7,016	1,164	453	28	1,104	4,473	576	75
1984	8,670	1,457	521	33	1,104	5,301	712	96
1985	9,991	1,737	457	30	1,103	5,697	854	121
1986	13,624	2,390	800	259	1,304	7,263	1,075	155
1987	18,243	3,645	828	262	1,854	9,003	1,231	178
1988	24,910	5,305	943	273	1,854	11,133	1,593	229
1989	26,247	6,357	927	275	1,803	10,165	1,502	224
1990	23,717	5,327	915	273	1,253	8,982	1,535	235
1991	23,386	4,949	943	278	1,103	8,744	1,582	249
1992	22,478	4,933	929	278	502	7,211	1,464	243
1993	22,552	5,086	934	281	103	6,525	1,679	288
1994	24,160	5,493	970	287	3	6,554	1,796	314
1995	25,704	5,870	1,007	291	4	6,555	1,899	338
1996	26,965	6,202	1,035	296	4	6,555	1,983	359
1997	27,982	6,483	1,057	299	4	6,555	2,050	376
1998	28,849	6,736	1,074	303	4	6,555	2,106	392
1999	29,618	6,966	1,089	306	5	6,555	2,156	406
2000	30,282	7,173	1,101	308	5	6,555	2,198	419

Utah Business Statistics

STATEWIDE STATISTICAL	August 1981	July 1981	August 1980	% Change From Year Ago	12 Month Average August 1981	12 Month Average August 1980	% Chg.
Agriculture							
Cash Receipts from Farm Marketing (thous. of dol.)	43,642	47,056	38,004	14.8	42,852.6	44,786.7	-4.3
Livestock and Livestock Products (thous. of dol.)	31,327	33,214	27,346	14.6	31,448.1	34,584.4	-9.1
Crops (thous. of dol.)	12,315	13,842	10,658	15.5	11,334.7	10,237.1	10.7
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	52.20	65.2	65.3	-20.1	62.0	66.6	-6.9
Lambs (cwt)	60.00	64.1	63.6	-4.0	58.6	62.1	-5.7
Turkeys (per lb.)	.45	.44	.47	-4.3	na	na	na
Milk, Wholesale (cwt)	12.80	12.0	12.3	4.1	13.4	12.4	8.4
Alfalfa Hay, Baled (per ton)	60.00	73.5	67.5	-11.1	70.2	63.0	11.4
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs)	17,333.6	18,687	17,864	-3.0	18,207.3	16,849.6	8.1
Calves (thous. of lbs.)	na	na	na	na	na	na	na
Sheep and Lambs (thous. of lbs.)	199	186	226	-11.9	220.4	229.5	-4.0
Hogs and Pigs (thous. of lbs.)	3,324	3,543	2,536	31.4	3,253.7	2,850.2	14.2
Finance							
Loans, Total, Utah Member Banks (mil. of dol.)[a]	3,395	3,234	3,005	9.76	3,236.2	3,163.5	2.30
Investments, Total, Utah Member Banks (mil. of dol.)[a]	940	940	898	4.68	934.0	830.6	12.45
Deposits, Total, Utah Member Banks (mil. of dol.)[a]	4,176	4,117	3,862	8.13	4,062.9	3,903.4	4.09
Demand Deposits of Banks, Total, Utah (mil. of dol.)[a]	68	68	65	4.62	60.9	57.3	6.28
Other Demand Deposits, Total, Utah (mil. of dol.)[a]	1,097	1,067	1,176	-6.72	1,126.3	1,207.6	-6.73
Time Deposits, Total, Utah (mil. of dol.)[b]	3,011	2,982	2,622	14.84	2,876.9	2,639.2	9.01
Savings, Savings and Loan Association (mil. of dol.)[b]	1,731.7	1,727.8	1,720.0	.69	na	1,701.0	na
Sale of U.S. Savings Bonds--Series E & H (thous. of dol.)	2,264	1,361.0	na	na	na	na	na
New Corporation (no.)	444	500	433	2.54	502.6	405.9	23.8
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	170,461.2	30,657.3	136,739.1	24.7	85,206.4	75,378.4	13.0
Sales & Use Tax	(7,179.00)	na	69,871.8	-110.3	na	38,748.7	na
Motor Fuel Tax	7,169.6	5,025.8	5,302.5	35.2	5,488.9	4,839.1	13.4
Individual Income Tax	49,785.3	12,158.6	38,075.5	30.8	26,892.3	26,645.5	15.9
Corporation Franchise Tax	1,814.8	1,221.6	1,962.3	-48.3	4,006.5	4,163.9	-3.8
Employment							
Civilian Labor Force (thous.)[c]	630.9	630.0	630.9	0.0	639.2	632.9	1.0
Total Employed Persons	590.1	589.2	591.5	-0.2	606.7	606.6	0.0
Unemployed	40.9	40.8	39.4	3.8	58.0	31.7	20.0
Percent Total Labor Force	6.5	6.5	6.2	4.8	6.1	5.0	22.5
Employees on Nonagricultural Payrolls (thous. of jobs)	550.1	548.8	544.8	1.0	569.7	568.4	0.2
Manufacturing	88.5	87.9	86.7	2.3	93.0	92.3	0.7
Mining	20.6	20.4	16.0	28.8	18.7	17.2	8.6
Contract Construction	30.4	30.4	33.4	-9.0	32.9	36.2	-9.3
Transportation, Communication and Utilities	34.1	34.2	34.4	-0.9	35.5	35.3	0.5
Wholesale Trade	35.5	35.6	34.1	4.1	37.2	36.1	3.1
Retail Trade	94.5	93.6	94.1	0.4	99.8	100.8	-1.0
Finance, Insurance and Real Estate	26.0	26.1	25.7	1.2	26.9	26.4	2.0
Services	101.6	101.2	99.3	2.3	105.6	104.0	1.5
Federal Government	37.4	37.8	37.2	0.5	37.9	37.2	1.9
State Government[e]	30.4	30.4	31.1	-2.3	33.6	33.4	0.7
Local Government[e]	51.0	51.2	53.1	-3.9	56.6	55.7	1.7
Average Weekly Hours							
Manufacturing	40.0	39.9	39.9	0.3	39.4	39.0	1.0
Mining	41.3	38.7	42.2	-2.1	42.1	41.1	2.5
Contract Construction	38.7	38.7	40.0	-3.1	38.1	37.6	1.3
Wholesale Trade	36.9	36.7	36.8	0.3	36.8	37.4	-1.6
Retail Trade	29.3	28.8	29.2	0.3	27.7	27.9	-0.8
Amount of Unemployment Comp. (thous. of dol.)	5,318.4	6,246.6	5,230.5	1.7	6,630.7	5,057.5	31.1
Construction							
Total Construction (thous. of dol.)	70,300	87,000	93,100	-24.5	93,483.6	96,010.0	-2.6
Residential	40,000	52,500	53,900	-25.8	50,092.8	38,486.3	30.2
Nonresidential	28,000	29,000	38,200	-26.7	34,116.4	47,795.8	-28.6
Public Works and Utilities	2,300	5,500	2,000	15.0	9,267.1	11,758.4	-21.2
Total Permit Construction (thous. of dol.)[f]	75,662.6	89,455.8	94,541.8	-19.9	83,809.4	82,052.5	2.1
Residential	42,521.6	44,148.7	48,521.9	-12.4	41,638.1	33,884.2	21.1
Nonresidential	24,308.9	38,278.4	35,796.6	-32.1	34,538.7	40,201.0	-14.1
Additions, Alterations and Repairs	8,833.1	7,028.7	10,193.3	-13.3	8,770.8	7,996.8	9.7
New Dwelling Units (no.)	862	1,013	1,364	-36.8	929.5	884.4	5.1
Tourism/Travel							
Air Passengers (total no. on and off)	390,355	401,931	413,204	-5.5	329,719.3	373,303.4	-11.7
Highway Traffic Count Across State Lines[f]	58,856	58,196	52,274	10.5	40,620.0	39,461.6	2.9
Transient Room Taxes (thous. of dol.)	na	na	562.8	na	na	214.8	na
Visits, State, Nat'l. Parks, Monuments (thous.)	2,049.7	2,288.2	2,093.6	-2.1	1,606.9	1,604.1	-0.3
General							
New Cars and Truck Sales	7,001	3,456	na	na	na	na	na
C.P.I. (National Index -- 1967 = 100)	276.5	274.4	249.4	10.9	261.7	236.8	10.5
Telephones in Service, (Business)	77,512	77,426	77,092	0.5	77,228.7	75,509.0	1.7
Telephones in Service, (Residential)	419,317	420,117	409,054	2.5	421,477.7	406,858.1	3.6
Electric Customers (Commercial)[f]	36,162	35,882	30,432	18.8	na	30,878.2	na
Electric Customers (Residential)[f]	387,176	383,434	343,439	12.7	na	342,738.6	na
Natural Gas Customers (Residential & Commercial)	361,562	394,236	376,256	-2.3	380,244.5	370,092.3	2.7
Natural Gas Customers (Industrial)	536	549	583	-7.7	575.8	610.3	-5.7
Production							
Net Electric Power Utilized (mil. of kwh)	1,177.1	1,155.6	967.0	21.7	1,103.5	1,023.6	7.8
Crude Oil to Refineries (thous. of bbls.)	4,663.6	4,671.8	4,652.5	15.1	4 300.7	4,397 3	-2.2
Crude Oil Production (thous. of bbls.)	na	na	2,057.9	na	na	2,155.8	na
Natural Gas Production (mil. of cu. ft.)	na	na	5,888.7	na	na	6,574.6	na
Coal (thous. short tons)	1,170	781	1,130	3.5	947.1	na	na
Copper (thous. metric tons)[g]	18,000	18,804	362	4,872	16,450.7	13,356.6	23.2

Utah Business Statistics

	August 1991	July 1991	August 1990	% Change from Year Ago	12 Month Average August 1991	12 Month Average August 1990	% Chg.
Wasatch Front (Salt Lake, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)	391.5	391.5	385.8	1.4	400.7	403.5	-0.7
Auth. Permit Construction (mil. of dol.)	33.9	44.6	54.4	-37.5	48.5	45.9	5.6
New Dwelling Units	297	284	864	-65.6	191.7	508.9	-3.4
Postal Receipts (thous.)	4,845.0	5,566.0	4,023.9	20.4	4,808.5	4,333.2	13.0
Electric Customers (Residential)	277,208	276,347	271,705	2.0	275,279.0	268,034.3	2.7
Electric Customers (Commercial)	22,403	22,391	21,668	3.4	22,221.5	21,202.7	4.8
Natural Gas Customers (Residential)	262,378	281,913	275,210	-4.7	281,240.8	274,803	2.3
Natural Gas Customers (Industrial)	398	398	431	-7.7	424.6	450.2	-5.7
Department Store Sales (mil. of dol.)	38,700	37,301	42,280	-8.5	39,788.7	34,902.3	14.0
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele)(thous.)	297.5	297.9	291.6	2.0	309.6	305.7	1.3
Auth. Permit Construction (mil. of dol.)	3.4	17.2	10.4	-67.0	15.2	13.2	14.4
New Dwelling Units	1	102	200	-99.5	6.2	49.1	-87.3
Postal Receipts (thous.)	3,977.8	4,063.7	3,287.7	21.0	3,939.2	3,527.7	11.7
Natural Gas Customers (Residential)	39,612	56,968	56,045	-29.3	55,683.7	56,940.3	-2.2
Natural Gas Customers (Industrial)	147	145	163	-9.8	160.0	165.3	-3.2
Telephones in Service (Business)[A]	41,486	41,594	42,382	-2.1	41,805.5	42,021.0	-0.5
Telephones in Service (Residential)[B]	214,026	215,166	210,352	2.2	213,843.2	208,670.5	2.5
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis)(thous.)	94.0	94.3	94.2	-0.2	97.6	96.6	1.0
Auth. Permit Construction (mil. of dol.)	3.7	5.5	4.1	-9.7	4.8	4.3	10.9
New Dwelling Units	21	7	25	-16.0	22.5	32	-29.8
Postal Receipts	348.5	412.6	292.4	19.2	379.8	338.8	12.1
Natural Gas Customers (Residential)	21,775	21,879	21,437	1.6	22,016.5	21,530.4	2.3
Natural Gas Customers (Industrial)	52	51	58	-10.3	54.3	59.9	-9.3
Telephones in Service (Business)[A]	7,037	7,040	6,977	0.9	7,048.7	6,930.9	1.7
Telephones in Service (Residential)[B]	43,426	43,459	42,720	1.7	43,379.0	42,519.1	2.0
Mountainland (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)	66.7	67.0	66.9	-0.3	72.6	72.5	0.1
Auth. Permit Construction (mil. of dol.)	24.1	22.5	22.7	6.2	15.1	16.1	-6.1
New Dwelling Units	255	762	149	71.1	164.4	162.1	1.4
Postal Receipts (thous.)	621.9	770.7	549.6	13.1	655.3	562.8	16.4
Electric Customers (Residential)	56,228	53,763	33,055	70.1	59,415.2	32,685.8	81.8
Electric Customers (Commercial)	5,892	5,927	3,074	91.7	6,631.4	3,065.8	116.3
Natural Gas Customers (Residential)	60,191	59,652	57,861	4.0	59,944.0	57,817.4	3.7
Natural Gas Customers (Industrial)	77	76	88	-12.5	84.4	91.6	-7.9
Provo							
Non-Ag. Employment (thous.)(Utah Co.)	60.7	61.0	60.9	-0.3	66.8	66.9	-0.2
Auth. Permit Construction (mil. of dol.)	2.9	2.9	2.0	46.4	3.3	2.9	13.0
New Dwelling Units	50	21	17	194.1	42.3	34.1	23.9
Postal Receipts (thous.)	350.3	388.2	299.8	16.8	366.0	308.4	18.7
Natural Gas Customers (Residential)	21,775	15,579	15,504	42.3	16,245.4	15,219.7	6.7
Natural Gas Customers (Industrial)	52	35	41	26.8	39.8	42.5	-6.3
Telephones in Service (Business)[A]	6,476	6,375	6,344	2.1	6,354.1	6,284.5	1.1
Telephones in Service (Residential)[B]	37,016	37,142	37,243	-0.6	38,715.8	37,997.2	1.9
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne)							
Non-Ag. Employment (thous.)	12.5	12.4	12.4	0.8	12.7	12.8	-0.7
Auth. Permit Construction (mil. of dol.)	4.0	2.2	4.1	-2.4	2.4	4.3	-21.1
New Dwelling Units	34	45	70	-51.4	36.5	34.9	4.6
Postal Receipts (thous.)	74.0	80.8	69.8	7.3	79.4	66.3	19.8
Electric Customers (Residential)	9,329	9,310	9,062	2.9	9,180.6	8,908.4	3.1
Electric Customers (Commercial)	1,758	1,752	1,958	-10.2	1,744.0	1,935.7	-9.9
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)	11.9	11.7	11.9	0.0	11.1	11.0	0.9
Auth. Permit Construction (mil. of dol.)	9.5	5.7	1.9	400.0	4.7	1.6	193.8
New Dwelling Units	117	46	82	36.6	41.4	22.3	85.7
Postal Receipts (thous.)	89.0	87.2	66.0	24.2	82.7	62.4	32.6
Electric Customers (Residential)	5,348	5,212	4,747	14.8	5,111.8	4,847.5	5.5
Electric Customers (Commercial)	779	779	647	12.7	742.4	759.9	-2.3
Natural Gas Customers (Residential)	4,716	4,736	4,547	3.7	4,788.6	4,665	2.6
Natural Gas Customers (Industrial)	5	5	6	-33.3	5.2	6.9	-24.2
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)	31.3	31.1	31.4	-0.3	31.9	31.8	0.3
Auth. Permit Construction (mil. of dol.)	4.1	4.0	4.6	-10.9	5.2	4.2	22.8
New Dwelling Units	70	95	82	-14.6	77.4	61.7	25.4
Postal Receipts (thous.)	308.0	257.1	180.6	15.2	237.0	199.0	19.1
Electric Customers (Residential)	25,877	25,802	14,364	80.2	29,226.1	14,110.6	107.1
Electric Customers (Commercial)	3,233	3,220	1,677	95.8	3,656.4	1,690.0	116.4
Natural Gas Customers (Residential)	24,841	24,928	23,714	4.8	24,536.2	23,827.7	3.0
Natural Gas Customers (Industrial)	46	45	46	0.0	46.1	47.3	-2.5
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)	19.9	19.7	19.8	0.5	19.2	20.0	-4.0
Auth. Permit Construction (mil. of dol.)	4.3	2.5	3.9	10.3	5.4	2.2	56.1
New Dwelling Units	32	19	94	-66.0	32.4	35.0	-7.4
Postal Receipts (thous.)	66.5	78.5	55.9	19.0	na	na	na
Electric Customers (Residential)	11,249	11,250	10,882	3.4	11,143.5	10,735.4	3.8
Electric Customers (Commercial)	1,436	1,446	1,408	2.0	1,422.7	1,417.8	0.3
Natural Gas Customers (Residential)	9,446	9,477	8,924	5.8	9,507.7	8,952.9	6.2
Natural Gas Customers (Industrial)	13	13	12	8.3	13.9	14.5	-4.3
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)	16.4	16.5	16.5	-0.6	16.2	16.2	-0.1
Auth. Permit Construction (mil. of dol.)	3.3	7.8	4.0	-17.5	4.6	3.8	22.1
New Dwelling Units	42	162	73	-42.5	87.4	59.9	45.9
Postal Receipts (thous.)	119.2	148.9	93.6	27.5	113.1	96.3	17.5
Electric Customers (Residential)	1,787	1,755	na	na	na	na	na
Electric Customers (Commercial)	371	367	na	na	na	na	na

Summary

Figure 3 (page 11) presents a graphic comparison of the three scenarios outlined in this report: the Baseline Projection, the Medium Development Scenario, and the High Development Scenario. These figures are the most current projections available to planners and decision makers responsible for developing impact mitigation measures. However, the most important result of the development of this impact projection process has been the creation of the capability to update these projections as plans for further energy development in the Uintah Basin become firmer.

BUSINESS STATISTICS
Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices: U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
Savings, Savings and Loan Association: Utah savings and loan institutions
U.S. Savings Bonds: U.S. Treasury Department
New Corporations: Utah Secretary of State
Tax Collections: Utah State Tax Commission
Employment data: Utah Department of Employment Security
Construction: Dodge Construction Statistics and BEBR
Air Passengers: Salt Lake International Airport, statistics service
Traffic Count: Utah Department of Transportation, Travel Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile Dealers Registrations Service Company
Telephone, electric, natural gas customers: cooperating Utah utility companies
Net Electric Power Utilized: cooperating Utah power companies
Crude Oil to Refineries: cooperating Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah Division of Oil, Gas and Mining

Footnotes:

* May not add to total due to rounding
[a] End of Period, includes member banks of Federal Reserve System
[b] As of the close of business on last day of the month
[c] Current year—preliminary data; previous year—final figures.
[d] Includes nonprofit and religious
[e] Includes public schools and colleges
[f] Total new construction plus additions, alterations and repairs
[g] Beginning January 1979, data reported in metric tons; to convert metric tons to short tons, multiply by 1.10231
[h] Includes Salt Lake County and Bountiful
[i] Includes Weber and Morgan Counties
[j] Includes Orem and Springville
r Revised
x Increase from zero or decrease to zero
na Not available

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